

ABSTRACT

A high-resistance silicon wafer is manufactured, in which a gettering ability and economical efficiency is excellent and an oxygen thermal donor is effectively prevented from being generated in a heat treatment for forming a circuit, which is to be implemented on the side of a device manufacturer. In order to implement the above, a high-temperature heat treatment at 1100°C or higher is performed on a carbon doped high-resistance and high-oxygen silicon wafer in which specific resistivity is 100 Ωcm or more and a carbon concentration is 5×10^{15} to 5×10^{17} atoms/cm³ so that a remaining oxygen concentration becomes 6.5×10^{17} atoms/cm³ or more (Old-ASTM). As this high-temperature treatment, an OD treatment for forming a DZ layer on a wafer surface, a high-temperature annealing treatment for eliminating a COP on the surface layer, a high-temperature heat treatment for forming a BOX layer in a SIMOX wafer manufacturing process and the like can be used.